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10/776,437	02/10/2004	Jagrut V. Patel	030222	2918
23596 7590 08/10/2009 QUALCOMM INCORPORATED 5775 MOREHOUSE DR. SAN DIEGO, CA 92121				
EXAMINER				
HUANG, WEI WU				
ART UNIT		PAPER NUMBER		
2618				
NOTIFICATION DATE		DELIVERY MODE		
08/10/2009		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/776,437

Applicant(s)

PATEL ET AL.

Examiner

WEN W. HUANG

Art Unit

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-15, 30-33, 37-39 and 41-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-15, 30-33, 37-39 and 41-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/8/09 has been entered.

Claims 11-15, 30-33, 37-39 and 41-50 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 11-15, 30-33, 37, 38 and 41-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olson (US. 6,727,602 B2) in view of Nishihara et al. (US. 6,522,902 B2; hereinafter "Nishihara"), Koenck et al. (US. Pub. No. 2004/0018851 A1; hereinafter "Koenck") and Andrieu (US. 5,336,568).

Regarding **claim 11**, Olson teaches a power source (see Olson, fig. 1), comprising:

first and second batteries (see Olson, fig. 1, battery 101 and batter 104);

means for determining a current required by a load (see Olson, fig. 1, power controller 108, load 107, fig. 2, I-load; col. 2, lines 44-46, monitoring the amount of current);

means for determining, based on the required current, the operations of the first and second batteries (see Olson, fig. 1, power controller 108, col. 5, lines 3-16, opening and closing the power switches 103 and 106 based on monitored and necessary voltage/current);

means for (see Olson, fig. 1, power controller 108) operating each of the first and second batteries in a pulse current discharge mode (see Olson, col. 5, lines 29-36; alternating fashion; col. 9, lines 58-63) while supplying continuous current to a load (see Olson, fig. 1, load 107, col. 5, lines 3-8; col. 9, lines 8-13) when no voltage differential exists between the first and second batteries (see Olson, col. 5, lines 53-55; discharging battery 101 and 104 evenly);

means for continuously coupling the first and second batteries to the load (see Olson, col. 5, lines 31-34, closing power switches 103 and 106) when no voltage differential exists between the first and second batteries (see Olson, col. 5, lines 53-55; discharging battery 101 and 104 evenly).

Olson is silent to teaching that comprising:

means for determining whether to operate each of the first and second batteries in a pulse current discharge mode or to continuously couple the first and second batteries to the load;

means for operating each of the first and second batteries in a pulse current discharge mode when the current required by the load exceeds a threshold; and

means for continuously coupling the first and second batteries to the load when the current required by the load is below the threshold. However, the claimed limitation is well known in the art as evidenced by Nishihara, Koenck and Andrieu.

In the same field of endeavor, Nishihara teaches a power source (see Nishihara, fig. 2, battery 2) comprising:

means for determining whether to operate each of the first and second batteries in a series connected mode or to continuously couple in parallel the first and second batteries to the load (see Nishihara, col. 9, lines 44-49, control section 12 determining the operation status of portable phone to operate 1st and 2nd batteries);

means for operating each of the first and second batteries in a series connected mode when operated in a traffic state (see Nishihara, col. 10, lines 10-21); and

means for continuously coupling in parallel the first and second batteries to the load when operated in an idle state (see Nishihara, col. 10, lines 22-33).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Olson with the teaching of Nishihara in order to extend the battery life by reducing the power consumption during the standby/idle time (see Nishihara, col. 2, lines 36-43).

The combination of Olson and Nishihara is silent to teaching that wherein operating each of the first and second batteries in series connected mode is operating each of the first and second batteries in a pulse current discharge mode; the load is operated in the traffic state when the current required by the load exceeds a threshold; and

the load is operated in the idle state when the current required by the load is below the threshold. However, the claimed limitation is well known in the art as evidenced by Koenck and Andrieu.

In the same field of endeavor, Koenck teaches a power source wherein the load is operated in the traffic state (see Koenck, fig. 7, para. [0142], operating mode, processor 48) when the current required by the load exceeds a threshold (see Koenck, threshold 100, fig. 7, para. [0142]); and

the load is operated in the idle state (see Koenck, fig. 7, para. [0142], idle mode, processor 48) when the current required by the load is below the threshold (see Koenck, threshold 101, fig. 7, para. [0142]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Olson and Nishihara with the teaching of Koenck in order to efficiently implement power saving technique on portable communication devices (see Koenck, para. [0121]).

The combination of Olson, Nishihara and Koenck is silent to teaching that wherein:

operating each of the first and second batteries in series connected mode is operating each of the first and second batteries in a pulse current discharge mode. However, the claimed limitation is well known in the art as evidenced by Andrieu.

In the same field of endeavor, Andrieu teaches a power source wherein operating each of the first and second batteries in series connected mode is operating each of the first and second batteries in a pulse current discharge mode (see Andrieu, fig. 2 and 3; batteries 20 and 21; switches 25 and 26; pulse 23; col. 4, lines 19-44) when the current required by the load exceeds a threshold (see Andrieu, col. 5, lines 5-6; col. 2, lines 25-27; heavy discharge current).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Olson, Nishihara and Koenck with the teaching of Andrieu in order to satisfy the heavy current requirement during traffic operation. The combination of Olson, Nishihara and Koenck suggests that a heavy current is needed for operation on traffic state and operation of a series connected dual battery during traffic state. Andrieu suggests that a dual battery system should be operated in a pulse discharge mode during heavy current requirement (see Andrieu, col. 5, lines 5-6; col. 2, lines 25-27; heavy discharge current).

Regarding **claim 12**, the combination of Olson, Nishihara, Koenck and Andrieu teaches the power source of claim 11 wherein the means for operating each of the first and second batteries in a pulse discharge mode comprises a first switch configured to intermittently couple to the first battery to the load, a second switch configured to

intermittently coupled the second battery to the load (see Olson, fig. 1, controlled power switches 103 and 106; col. 9, liens 58-63), and means for controlling the first and second switches (see Olson, fig. 3, Vp and Vn, col. 9, lines 24-31).

Regarding **claim 13**, the combination of Olson, Nishihara, Koenck and Andrieu teaches the power source of claim 12 wherein the means for operating each of the first and second batteries in a pulse discharge mode (see Andrieu, fig. 2 and 3) further comprises means for measuring the current supplied to the load (see Koenck, fig. 7, para. [0142]), the means for controlling the first and second switches being responsive to the measured current (see Nishihara, col. 9, lines 44-49, control section 12 determining the operation status of portable phone to operate 1st and 2nd batteries).

Regarding **claim 14**, the combination of Olson, Nishihara, Koenck and Andrieu teaches the power source of claim 12, wherein the means for controlling the first and second switches is configured to couple the first battery to the load before removing the second battery from the load (see Andrieu, fig. 3)

Regarding **claim 15**, the combination of Olson, Nishihara, Koenck and Andrieu further teaches the power source of claim 12 wherein the means for controlling the first and second switches is responsive to voltage measured at each of the first (see Olson, col. 5, lines 47-55).

Regarding **claim 30**, Olson teaches a wireless communications device (see Olson, fig. 1, col. 2, lines 34-37), comprising:

a processor configured to support wireless communications (see Olson, col. 2, lines 34-37; fig. 1, load 107), the processor being further configured to operate in a traffic state or in idle state (see Olson, col. 3, lines 45-50, standby state and active state);

first and second batteries (see Olson, fig. 1, battery 101 and battery 104); and

a power management module (see Olson, fig. 1, power controller 108) configured to determine a current required by the processor (see Olson, fig. 1, power controller 108, load 107, fig. 2, I-load; col. 2, lines 44-46, monitoring the amount of current); and

the power management further configured to determine, based on the required current, the operations of the first and second batteries (see Olson, fig. 1, power controller 108, col. 5, lines 3-16, opening and closing the power switches 103 and 106 based on monitored and necessary voltage/current);

wherein the power management (see Olson, fig. 1, power controller 108) is further configured to operate each of the first and second batteries in a pulse current discharge mode (see Olson, col. 5, lines 29-36; alternating fashion; col. 9, lines 58-63) while supplying continuous current to the processor (see Olson, fig. 1, load 107, col. 5, lines 3-8; col. 9, lines 8-13) when no voltage differential exists between the first and second batteries (see Olson, col. 5, lines 53-55; discharging battery 101 and 104 evenly);

wherein the power management (see Olson, fig. 1, power controller 108) is further configured to continuously couple the first and second batteries to the load (see Olson, col. 5, lines 31-34, closing power switches 103 and 106) when no voltage differential exists between the first and second batteries (see Olson, col. 5, lines 53-55; discharging battery 101 and 104 evenly).

Olson is silent to teaching that comprising:

wherein the power management is configured to determine whether the processor is operating in the traffic state or the idle state, and whether to operate each of the first and second batteries in a pulse current discharge mode or to continuously couple the first and second batteries to the load;

wherein the power management is configured to operate each of the first and second batteries in a pulse current discharge mode when the wireless communications device is in the traffic state; and

wherein the power management is configured to continuously couple the first and second batteries to the load when the wireless communications device is in the idle state. However, the claimed limitation is well known in the art as evidenced by Nishihara, Koenck and Andrieu.

In the same field of endeavor, Nishihara teaches a wireless communications device (see Nishihara, fig. 2, portable telephone 1) wherein:

wherein the power management is configured to determine whether the processor is operating in the traffic state or the idle state (see Nishihara, col. 9, lines 44-46), and whether to operate each of the first and second batteries in a series connected

mode or to continuously couple in parallel the first and second batteries to the load based on the operating state of the processor (see Nishihara, col. 9, lines 44-49, control section 12 determining the operation status of portable phone to operate 1st and 2nd batteries);

wherein the power management is configured to operate each of the first and second batteries in a series connected mode when the wireless communications device is in the traffic state (see Nishihara, col. 10, lines 10-21); and

wherein the power management is configured continuously couple in parallel the first and second batteries to the processor when the wireless communications devices is in the idle state (see Nishihara, col. 10, lines 22-33).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Olson with the teaching of Nishihara in order to extend the battery life by reducing the power consumption during the standby/idle time (see Nishihara, col. 2, lines 36-43).

The combination of Olson and Nishihara is silent to teaching that wherein operating each of the first and second batteries in series connected mode is operating each of the first and second batteries in a pulse current discharge mode;

the current/voltage required by the processor is indicative of the operating state of the processor. However, the claimed limitation is well known in the art as evidenced by Koenck and Andrieu.

In the same field of endeavor, Koenck teaches an apparatus wherein

the current/voltage required by the processor is indicative of the operating state of the processor (see Koenck, fig. 7, para. [0142], operating mode, processor 48).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Olson and Nishihara with the teaching of Koenck in order to efficiently implement power saving technique on portable communication devices (see Koenck, para. [0121]).

The combination of Olson, Nishihara and Koenck is silent to teaching that wherein:

operating each of the first and second batteries in series connected mode is operating each of the first and second batteries in a pulse current discharge mode. However, the claimed limitation is well known in the art as evidenced by Andrieu.

In the same field of endeavor, Andrieu teaches a wireless communications device (see Andrieu, col. 5, lines 17-18) wherein operating each of the first and second batteries in series connected mode is operating each of the first and second batteries in a pulse current discharge mode (see Andrieu, fig. 2 and 3; batteries 20 and 21; switches 25 and 26; pulse 23; col. 4, lines 19-44) when the current required by the load exceeds a threshold (see Andrieu, col. 5, lines 5-6; col. 2, lines 25-27; heavy discharge current).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Olson, Nishihara and Koenck with the teaching of Andrieu in order to satisfy the heavy current requirement during traffic operation. The combination of Olson, Nishihara and Koenck suggests that a heavy current is needed for operation on traffic state and operation of a series

connected dual battery during traffic state. Andrieu suggests that a dual battery system should be operated in a pulse discharge mode during heavy current requirement (see Andrieu, col. 5, lines 5-6; col. 2, lines 25-27; heavy discharge current).

Regarding **claim 31**, the combination of Olson, Nishihara, Koenck and Andrieu also teaches the wireless communications device of claim 30, wherein the power management module comprises a switch control module (see Olson, fig. 3, Vp and Vn, col. 9, lines 24-31), and a switch configured to intermittently couple the first and second batteries to the processor under control of the switch control module (see Olson, fig. 1, switches 103 and 106; col. 9, lines 58-63).

Regarding **claim 32**, the combination of Olson, Nishihara, Koenck and Andrieu also teaches the wireless communications device of claim 31, wherein the switch comprises a first switch configured to intermittently couple the first battery to the processor under control of the switch control module (see Olson, fig. 1, switch 103), and a second switch configured to intermittently couple the second battery to the processor under control of the switch control module (see Olson, fig. 1, switch 106).

Regarding **claim 33**, the combination of Olson, Nishihara, Koenck and Andrieu also teaches the wireless communications device of claim 32, wherein the first and second switches, each comprises a field effect transistor (see Olson, fig. 2, col. 7, lines 40-45).

Regarding **claim 37**, the combination of Olson, Nishihara, Koenck and Andrieu teaches the wireless communications device of claim 30 wherein the power control module is further configured to determine the processor state as a function of the current supplied to the processor (see Koenck, fig. 7, para. [0142]),

Regarding **claim 38**, the combination of Olson, Nishihara, Koenck and Andrieu teaches the wireless communication device of claim 30 wherein the switch control module is further configured to control the switch as a function of voltage measured at each of the first and second batteries (see Olson, col. 5, lines 47-55).

Regarding **claim 41**, Olson teaches a power source (see Olson, fig. 1), comprising:

first and second batteries (see Olson, fig. 1, battery 101 and batter 104);
a power management module configured to determine a current required by a load (see Olson, fig. 1, power controller 108, load 107, fig. 2, I-load; col. 2, lines 44-46, monitoring the amount of current), and, based on the required current, the power management module being further configured to determine the operations of the first and second batteries (see Olson, fig. 1, power controller 108, col. 5, lines 3-16, opening and closing the power switches 103 and 106 based on monitored and necessary voltage/current);

wherein the power management module is further configured to (see Olson, fig. 1, power controller 108) operate each of the first and second batteries in a pulse current discharge mode (see Olson, col. 5, lines 29-36; alternating fashion; col. 9, lines 58-63) while supplying continuous current to a load (see Olson, fig. 1, load 107, col. 5, lines 3-8; col. 9, lines 8-13) when no voltage differential exists between the first and second batteries (see Olson, col. 5, lines 53-55; discharging battery 101 and 104 evenly);

wherein the power management module is further configured to continuously couple the first and second batteries to the load (see Olson, col. 5, lines 31-34, closing power switches 103 and 106) when no voltage differential exists between the first and second batteries (see Olson, col. 5, lines 53-55; discharging battery 101 and 104 evenly).

Olson is silent to teaching that wherein:

wherein the power management module is further configured to determine whether to operate each of the first and second batteries in a pulse current discharge mode or to continuously couple the first and second batteries to the load;

wherein the power management module is further configured to operate each of the first and second batteries in a pulse current discharge mode when the current required by the load exceeds a threshold; and

wherein the power management module is further configured to continuously couple the first and second batteries to the load when the current required by the load is below the threshold. However, the claimed limitation is well known in the art as evidenced by Nishihara, Koenck and Andrieu.

In the same field of endeavor, Nishihara teaches a power source (see Nishihara, fig. 2, battery 2):

wherein the power management module is further configured to determine whether to operate each of the first and second batteries in a series connected mode or to continuously couple in parallel the first and second batteries to the load (see Nishihara, col. 9, lines 44-49, control section 12 determining the operation status of portable phone to operate 1st and 2nd batteries);

wherein the power management module is further configured to operate each of the first and second batteries in a series connected mode when operated in a traffic state (see Nishihara, col. 10, lines 10-21); and

wherein the power management module is further configured to continuously couple in parallel the first and second batteries to the load when operated in an idle state (see Nishihara, col. 10, lines 22-33).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Olson with the teaching of Nishihara in order to extend the battery life by reducing the power consumption during the standby/idle time (see Nishihara, col. 2, lines 36-43).

The combination of Olson and Nishihara is silent to teaching that wherein operating each of the first and second batteries in series connected mode is operating each of the first and second batteries in a pulse current discharge mode; the load is operated in the traffic state when the current required by the load exceeds a threshold; and

the load is operated in the idle state when the current required by the load is below the threshold. However, the claimed limitation is well known in the art as evidenced by Koenck and Andrieu.

In the same field of endeavor, Koenck teaches a power source wherein the load is operated in the traffic state (see Koenck, fig. 7, para. [0142], operating mode, processor 48) when the current required by the load exceeds a threshold (see Koenck, threshold 100, fig. 7, para. [0142]); and

the load is operated in the idle state (see Koenck, fig. 7, para. [0142], idle mode, processor 48) when the current required by the load is below the threshold (see Koenck, threshold 101, fig. 7, para. [0142]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Olson and Nishihara with the teaching of Koenck in order to efficiently implement power saving technique on portable communication devices (see Koenck, para. [0121]).

The combination of Olson, Nishihara and Koenck is silent to teaching that wherein:

operating each of the first and second batteries in series connected mode is operating each of the first and second batteries in a pulse current discharge mode. However, the claimed limitation is well known in the art as evidenced by Andrieu.

In the same field of endeavor, Andrieu teaches a power source wherein operating each of the first and second batteries in series connected mode is operating each of the first and second batteries in a pulse current discharge mode (see Andrieu,

fig. 2 and 3; batteries 20 and 21; switches 25 and 26; pulse 23; col. 4, lines 19-44) when the current required by the load exceeds a threshold (see Andrieu, col. 5, lines 5-6; col. 2, lines 25-27; heavy discharge current).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Olson, Nishihara and Koenck with the teaching of Andrieu in order to satisfy the heavy current requirement during traffic operation. The combination of Olson, Nishihara and Koenck suggests that a heavy current is needed for operation on traffic state and operation of a series connected dual battery during traffic state. Andrieu suggests that a dual battery system should be operated in a pulse discharge mode during heavy current requirement (see Andrieu, col. 5, lines 5-6; col. 2, lines 25-27; heavy discharge current).

Regarding **claims 42-46**, the dependent claims are interpreted and rejected for the same reasons as set forth above in claims 31-33, 14 and 38, respectively.

2. Claims 39 and 47-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olson, Nishihara, Koenck and Andrieu as applied to claims 11, 30, 38, 41 and 42 above, and further in view of Choo (US. 6,452,362).

Regarding **claim 39**, the combination of Olson, Nishihara, Koenck and Andrieu teaches the wireless communication device of claim 38.

The combination of Olson, Nishihara, Koenck and Andrieu is silent to teaching that wherein the selection module is further configured to control the switch to couple one of the first and second batteries having the highest voltage to the load. However, the claimed limitation is well known in the art as evidenced by Choo.

In the same field of endeavor, Choo teaches a wireless communications devices wherein the selection module is further configured to control the switch to couple one of the first and second batteries having the highest voltage to the load (see Choo, fig. 3, S125 and S135, col. 9, lines 15-25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Olson, Nishihara, Koenck and Andrieu with the teaching of Choo in order to maximize the usage time of the batteries (see Choo, col. 3, lines 49-51).

Regarding **claim 47**, the dependent claim is interpreted and rejected for the same reasons as set forth above in claim 39.

Regarding **claim 48**, the combination of Olson, Nishihara, Koenck and Andrieu teaches the power source of claim 11.

The combination of Olson, Nishihara, Koenck and Andrieu is silent to teaching that further comprising means for continuously coupling the battery with a greater voltage to the load when a voltage differential exists between the first and second

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batteries. However, the claimed limitation is well known in the art as evidenced by Choo.

In the same field of endeavor, Choo teaches a power source further comprising means for continuously coupling the battery with a greater voltage to the load when a voltage differential exists between the first and second batteries (see Choo, fig. 3, S125 and S135, col. 9, lines 15-25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Olson, Nishihara, Koenck and Andrieu with the teaching of Choo in order to maximize the usage time of the batteries (see Choo, col. 3, lines 49-51).

Regarding **claims 49 and 50**, the dependent claims are interpreted and rejected for the same reasons as set forth above in claim 48.

Response to Arguments

Applicant's arguments with respect to claims 11, 30 and 41 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WEN W. HUANG whose telephone number is (571)272-7852. The examiner can normally be reached on 10am - 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on (571) 272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wen W Huang/
Examiner, Art Unit 2618